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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,158	02/13/2004	David R. Tomlinson	P24018	3998

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GREENBLUM & BERNSTEIN, P.L.C.  
1950 ROLAND CLARKE PLACE  
RESTON, VA 20191

EXAMINER
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WASHBURN, DANIEL C

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2672

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/777,158	Applicant(s) TOMLINSON ET AL.	
	Examiner Dan Washburn	Art Unit 2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10 June 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 8, 10, 11, 14, 16, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Flamini et al. (US 2004/0100486).

Regarding claim 1, Flamini describes a real time embedded video processing system, comprising: a real time operating system; a graphics application that generates computer graphics in response to user input; an input control application that controls at least one of video input source in response to user input; and a video processing engine, or pixel processing engine, that receives input from at least one of the video input sources and receives computer graphics from the graphics application, the video processing engine, or pixel processing engine, alpha blending the computer graphics with the input and outputting the blended data in substantially real time. For example, Flamini describes a video processing system that comprises a user interface of control elements that overlay video content on a display paragraph 0053. The video processing software is stored on a computer-readable medium that is executed by a computer paragraph 0054, which inherently means that the video processing system

includes a real time operating system that supports the software program. The software program, or graphics application, generates computer graphics in response to user input; in this case the program displays menus, thumbnail images, and tools upon request from the user paragraphs 0070 and 0071. The input control application is a basic remote control and it controls the video processing engine, which receives video input from the video input source and computer graphics from the graphics application paragraph 0070. The video processing engine then alpha blends the computer graphics with the background content and outputs the blended images in real time paragraphs 0070 and 0072.

Concerning claim 2, Flamini includes a system comprising an input/output interface that communicates with a user input device. For example, Flamini describes that a user can interact with the video processing software by using a standard remote control that is configured to communicate with the application paragraph 0070.

With regard to claim 3, Flamini discloses a system in which the I/O interface communicates with the mass storage device. For example, Flamini offers Figure 4, which illustrates photo information appliance 202 coupled to mass storage device 206. The system communicates with the mass storage device when it needs to access stored images or other stored data paragraph 0075.

As to claim 4, Flamini describes a system in which the video processing engine receives input from the mass storage device and overlays the computer graphics on the input received from the mass storage device in real time. For example, Flamini discloses that the mass storage device connected to the photo information appliance

202 (of Figure 4) is capable of storing a large number of digital images, such as photos paragraph 0075. Flamini further describes that the user is allowed to manipulate the selected photos, accessed from the mass storage device, in real time paragraph 0070.

Regarding claim 5, Flamini describes a system in which the I/O interface is a USB interface. For example, Flamini includes that an input device 208 (of Figure 4) can be coupled to the photo information appliance 208 to provide images to the photo information appliance. Flamini further describes that the possible input devices include devices that are connected via USB paragraph 0076.

Concerning claim 8, Flamini includes a system in which the plurality of video input sources have a plurality of different protocols. For example, Flamini describes that the video input device can be connected via USB, 1394 Firewire, or other communication protocol paragraph 0076.

With regard to claims 10 and 11, Flamini describes a system in which the plurality of video input sources generate video streams having a plurality of different formats, and in which the different formats comprise at least one of YUV, RGB, S-video, composite, VGA, and DVI. For example, Flamini discloses that the system can accept digital video signals in many well-known formats, such as BNC composite, serial digital, parallel digital, RGB, or consumer digital video paragraph 0077.

As to claim 14, Flamini describes a system in which the video processing engine outputs the blended data to a plurality of output devices. For example, Flamini describes a video processing engine that uses alpha blending to blend graphics and video paragraph 0072, and further describes the processed images can be output to

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any number and type of output devices including a laser printer, Zip<sup>TM</sup> drive, CD, DVD, the Web, and email paragraph 0079.

Regarding claim 16, Flamini discloses a system in which blended data is stored as an image file. For example, Flamini describes that when the photo information appliance has completed the processing of the digital image a user can output the image to locations such as a Zip<sup>TM</sup> drive, CD, or DVD paragraph 0079. Flamini further describes that the mass storage devices save the data in the form of digital images paragraph 0075.

Concerning claim 17, Flamini includes a video processing system that is portable. For example, Flamini offers Figure 4, which illustrates the photo information appliance 202 potentially coupled to a television set 204, output devices 210, input devices 208, and peripheral devices 206. These devices are all optional attachments, but alone the photo information appliance is simply a small computer system, which is considered portable.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 7, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flamini et al. (US 2004/0100486) in view of White et al. (US 6,909,438) and further in view of Fang (US 2004/0257369).

As to claims 6 and 7 Flamini describes a video processing engine comprising a software program that blends computer graphics and video, as discussed in the rejection of claim 1. Flamini doesn't describe that the video processing engine comprises a dedicated logic circuit or that the dedicated logic circuit comprises a field programmable gate array (FPGA).

However, White describes a system of blending two images, such as a video source and a still image, which can be implemented wherein some or all of the software is replaced by a dedicated logic circuit, such as an FPGA column 2 lines 61-66 and column 4 lines 1-13. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Flamini in view of Fang the implementation option of using a field programmable gate array as taught by White in order to create a more efficient video processing device that has minimal delay in completing a set number of tasks while using a minimal amount of hardware. Flamini in view of White doesn't

describe that the video processing engine also comprises at least one encoder, at least one video decoder, and a video buffer.

However, Fang describes a system that blends graphics and video and does comprise at least one encoder, at least one video decoder, and a video buffer. For example, Fang offers Figure 1, which includes an MPEG, or video, decoder 110, an analog NTSC/PAL decoder 200, an NTSC/PAL encoder 170, a video frame buffer 120, and a graphic and video frame buffer 150. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Flamini the encoder, video decoder, and video buffer as taught by Fang in order to provide a means of decoding incoming data, buffering the video data until the graphics processor is ready to blend the video with graphics, and encoding the video so it is compatible with a display device that requires NTSC/PAL encoded data. The advantage of these added components is that the decoders will allow the system to be compatible to a wider range of inputs, the buffers will allow the system to process information with less delay, and the encoder will allow the system to output information to a wider range of display devices.

Concerning claim 21, Flamini describes a real time embedded video processing system, comprising: a central processing unit (CPU); a real time operating system that communicates with the CPU; an input/output (I/O) interface that receives user input via a wireless user input device; a graphics application that generates computer graphics in response to user input received from the user input device, the application interfacing with the CPU via the operating system; a device remote control application that controls



a plurality of different video input devices in response to user input received from the user input device; and a video processing engine, or pixel processing engine, that receives input from at least one of the video input sources and receives computer graphics from the graphics application, the pixel processing engine alpha blending the computer graphics with the input and outputting the blended data in real time. For example, Flamini describes a software program that blends computer graphics and a video signal. The software program is described as being stored on a computer-readable medium arranged to cause a host computer system to execute operations paragraphs 0053 and 0054. The host computer system is considered a real time video processing system, comprising: a CPU and a real time operating system that communicates with the CPU. The host computer system also has an I/O interface that receives user input via a wireless user input device paragraph 0070, in this case a standard remote control, and a graphics application that generates computer graphics in response to user input received from the user input device paragraphs 0071 and 0072, in this case drop down menus and tools to modify images. The device remote control application controls a plurality of different video input devices in response to user input received from the user input device paragraphs 0070 and 0076, in this case the user has control over the video input device currently connected to the photo information appliance, and the photo information appliance is compatible with a plurality of input devices. Finally, Flamini describes that the real time embedded video processing system accepts input from a video source and overlays this input with computer

graphics by alpha blending the computer graphics and video input together to make a composite image paragraphs 0070 and 0072.

Flamini doesn't teach that the video processing engine comprises a field programmable gate array (FPGA) comprising a CPU interface and a pixel processing engine that receives input from at least one of the video input sources and receives computer graphics from the graphics application via the CPU and CPU interface.

However, White describes a video processing engine comprises a field programmable gate array (FPGA) comprising a CPU interface and a pixel processing engine that receives input from at least one of the video input sources and receives computer graphics from the graphics application via the CPU and CPU interface. For example, White discloses a system that receives a video signal and a computer graphics signal and blends the two signals using alpha blending column 2 lines 61-67 and column 3 lines 1-16. White further discloses that the system can be accomplished using a combination of software and hardware, where the software is stored on one or more processor readable storage media and the dedicated hardware can be an FPGA column 4 lines 1-13. If the system comprises both a CPU and dedicated hardware such as an FPGA then it is inherent that the system also comprises a CPU interface to allow the CPU and dedicated hardware to communicate. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Flamini the FPGA as taught by White in order to create a more efficient video processing device that has minimal delay in completing a set number of tasks while using a minimal amount of hardware.

Flamini in view of White doesn't teach that the FPGA also comprises a video buffer, at least one video decoder, at least one video encoder, and a video buffer controller, and that the pixel processing engine receives input from at least one of the video input sources via at least one of the video decoders and outputs the final blended computer graphics and video data in real time to at least one of the video encoders.

However, Fang describes a system that takes in video data and computer graphics data and outputs an image consisting of blended computer graphics and video paragraph 0007. Fang also includes Figure 1, which illustrates video frame buffer 120, Analog NTSC/PAL video decoder 200, and NTSC/PAL video encoder 170. Graphics processor 130 combines computer graphics and video; it takes in the video through the NTSC/PAL decoder or MPEG decoder and outputs the final blended computer graphics and video data in real time through the NTSC/PAL encoder as required. It is inherent that the system described by Fang includes video buffer controllers that control the movement of data into and out of the video frame buffers, as the buffers would be useless without logic that dictates when saving data to each buffer is allowed and when accessing data within each buffer is allowed. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Flamini in view of White the video encoder, video decoder, video buffer controller, and video buffer as taught by Fang in order to provide a means of decoding incoming data, buffering the video data until the graphics processor is ready to blend the video with graphics, and encoding the video so it is compatible with a display device that requires NTSC/PAL encoded data. The advantage of these added components is that the decoders will allow the system to

be compatible to a wider range of inputs, the buffers will allow the system to process information with less delay, and the encoder will allow the system to output information to a wider range of display devices.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flamini et al. (US 2004/0100486).

Concerning claim 9, Flamini describes a video processing engine that blends computer graphics and video and can accept a number of different communication protocols, including USB and 1394 (Firewire) paragraph 0076. Flamini doesn't describe that the protocols also include one of RS-232, RS-422, Control-M, LANC, and infrared.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to include in Flamini the Recommended Standard serial protocols, such as RS-232 and RS-422, in order to ensure that the photo information appliance is compatible with devices that aren't equipped with USB or 1394 (Firewire) serial communication ports but are equipped with standard 9-pin serial ports that follow RS-232 protocol.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flamini et al. (US 2004/0100486) in view of Lin (US 5,936,683).

Regarding claims 12 and 13 Flamini describes that the photo information appliance 202 of Figure 4 can accept a plurality of digital and analog video signals. Flamini further describes that the photo information appliance can accept an analog signal from an analog television and that the image processor uses an analog-to-digital converter to convert the analog signal into a discrete series of digitally encoded

numbers to create a data word suitable for digital processing paragraph 0078. Flamini doesn't describe translating the video from a YUV signal format to an RGB signal format by digitally color mapping the YUV format into an RGB format.

However, Lin describes translating the YUV signal format into an RGB format using digital color mapping. For example, Lin describes a process of using color look-up tables, which is considered color mapping, to convert YUV signals into RGB signals column 2 lines 33-67 and column 3 lines 1-20. It would have been obvious one of ordinary skill in the art at the time of the invention to include in Flamini the conversion from YUV format to RGB format as taught by Lin in order to use a simple and proven method of converting a YUV signal, from an analog television for instance, into an RGB signal so Flamini's photo information appliance can accept and digitally process signals without putting unnecessary strain on the photo information appliance's central processor.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flamini et al. (US 2004/0100486) in view of Shen et al. (US 6,401,059).

Concerning claim 15, Flamini describes using an input device comprising a client application that communicates with a host application within the system, as described in the rejection of claim 1. For example, Flamini includes that a user can interact with the software program using a standard remote control paragraph 0070. Flamini doesn't describe that the remote control comprises a personal digital assistant (PDA).

However, Shen describes a method and system for using a PDA as a remote control column 2 lines 21-37. It would have been obvious to one of ordinary skill in the

art at the time of the invention to include in Flamini the PDA that acts as a personal remote control as taught by Shen in order to give the user one remote control that is capable of a variety of functions such as giving program schedule information for television shows, or controlling a variety of appliances such as Flamini's photo information appliance, a television, DVD player, VCR, and sound system. The multi-functional PDA remote simplifies a user's interaction with many devices, which makes the devices easier to manage and the addition of new devices, such as a photo information appliance, less of a burden and therefore more appealing.

Claims 18-20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flamini et al. (US 2004/0100486) in view of White et al. (US 6,909,438).

As to claim 18, Flamini describes a system for real time video processing, comprising: a pixel processing engine that receives input from a video input source and receives computer graphics from a graphics application, the pixel processing engine alpha blending the computer graphics with the video input source and outputting the blended data in substantially real time, as discussed in the rejection of claim 1. Flamini doesn't describe that the system comprises a dedicated logic circuit.

However, White discusses a similar system that has the option of being implemented using a dedicated logic circuit. For example, White includes a system of blending two images, such as a video source and a graphical effect, which can be implemented wherein some or all of the software is replaced by a dedicated logic circuit, such as an FPGA column 2 lines 61-66, column 3 lines 1-16, and column 4 lines 1-13. It would have been obvious to one of ordinary skill in the art at the time of the invention

to include in Flamini the option of using a dedicated logic circuit in place of, or in conjunction with, a central processor as taught by White in order to create a more efficient video processing device that has minimal delay in completing a set number of tasks while using a minimal amount of hardware.

With regard to claim 19, Flamini in view of White discloses a dedicated logic circuit further comprising a CPU interface that receives the computer graphics. For example, Flamini describes a program that operates on a host computer system and blends computer graphics with video or still images paragraphs 0053 and 0054. The host computer system can be designed to be a dedicated logic circuit as taught by White column 4 lines 1-13 and if the system contains a CPU and dedicated logic circuit, such as an FPGA, then it is inherent that the system will contain a CPU interface that allows the dedicated logic circuit and CPU to communicate. The CPU interface in this case will receive computer graphics from the CPU and send them to the dedicated logic circuit. Flamini in view of White doesn't describe the dedicated logic circuit further comprises a buffer controller that controls an external buffer.

However, Flamini does describe that the program that blends video and graphics resides in a photo information appliance 202, of Figure 4, and that the photo information appliance 202 can be coupled to a peripheral device 206 that is capable of storing a number of high resolution images, such devices include a Zip<sup>TM</sup> drive or any other mass storage device capable of storing a large quantity of data. It would have been obvious to one of ordinary skill in the art at the time of the invention to implement a buffer controller in the photo information appliance of Flamini to control the buffer associated

with any external mass storage device when large amounts of information are transferred from the external device to the photo information appliance, in order to guarantee that the mass storage device sends data to the photo information appliance at a compatible rate.

Regarding claim 20, Flamini in view of White describes a dedicated logic circuit in which the dedicated logic circuit processes a plurality of input video streams and outputs a plurality of output video streams, the streams having a plurality of different formats. For example, Flamini includes that the photo information appliance can handle a plurality of different digital video input devices, where each device has one of many well-known formats paragraph 0077. Flamini also describes that the processed digital image can be output to a plurality of output devices, such as a laser printer, Zip<sup>TM</sup> drive, CD, DVD, the web, and email, where each output device has its own specific format for exchanging information with the photo information appliance paragraph 0079.

Concerning claim 22, Flamini includes a video processing system that is portable. For example, Flamini offers Figure 4, which illustrates the photo information appliance 202 potentially coupled to a television set 204, output devices 210, input devices 208, and peripheral devices 206. These devices are all optional attachments, but alone the photo information appliance is simply a small computer system, which is considered portable.



***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ratnaker et al. (2005/0024387) describes blending custom images with a master image, Rodriguez et al. (2005/0160468) describes a method of determining an input device from a wide range of acceptable input devices, Moskowitz (US 2005/0160456) includes an electronic program guide that shows a television signal and a graphics overlay, and Kuo et al. (US 6,707,505) discloses a method and apparatus for combining video and graphics.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Washburn whose telephone number is (571) 272-5551. The examiner can normally be reached on Monday through Friday 8:30 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (571) 272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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RICHARD HJERPE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600